Completed Pollution Prevention Project Case Study

United States Department of Energy
Office of Environmental Management
Fact Sheet

Machine Coolant

Los Alamos National Laboratory

Original Problem

The main machine shop used to be the largest generator of waste coolant at LANL, producing approximately 14,000 kg of waste per year. In 1998 the shop adopted a "zero-waste" strategy.

The Project Solution

The complete system consists of several components that were added sequentially. The old type of coolant was replaced with "Blaser Swisslube", a non-toxic mineral oil based coolant. A "HYDE" recycling unit filters tramp oil and metal particles out of the coolant so the coolant can be reused. "Cool-Clean" units on each machine circulate the coolant and prevent most kinds of bacterial growth. A "Samsco" evaporator reduces the waste coolant volume by 95% by evaporating the water. The remaining coolant concentrate can be sent for recycling along with the accumulated tramp oil.

Value of Improvement

The machine shop saves about $100,000 per year in reduced waste treatment fees and virgin coolant purchases. Employee exposure to the coolant is no longer a health issue because "Blaser Swisslube" coolant is non-toxic. The machine shop expects to generate less than 50kg of RCRA hazardous waste per year from now on.

Lifecycle Waste Reduction	
Lifecycle Waste Reduction	14,000kg/year
Commencement Date	1999
Project Useful Life (Years)	Indefinite

DOE Monetary Benefits	
Total Project Cost	NA
Lifecycle Savings	$100,000 / year
Return on Investment	NA

Benefits At-A-Glance

- 14,000 kg less of hazardous waste is generated at the machine shop each year.
- Approximately $100,000 is saved annually on waste treatment fees and virgin coolant concentrate purchases.
- Employee exposure to the coolant is no longer a health issue since "Blaser Swisslube" coolant is non-toxic.

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Summary Data	
Priority Area:	Waste Minimization Projects
Project Type:	Source Reduction
Total Project Cost:	NA
Lifecycle Savings:	$100,000 per year (estimated)
Implementing Group:	ESA-WMM
Benefiting Group:	ESA-WMM
Useful Life Years:	Indefinite
Return on Investment:	NA
Lifecycle Waste Reduction:	14,000 kg hazardous waste / year
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